

Claims:

1. Pyrogenically produced silicon dioxide powder having a specific surface area of between 5 and 600 m²/g and a carbon content of less than 500 ppm, characterised in that it displays
 - 5 a specific dibutyl phthalate absorption of less than or equal to 1.2 g dibutyl phthalate/100 g SiO₂ per m² of specific surface area
 - 10 and a specific thickening effect of less than 15 mPas per m² of specific surface area.
2. Silicon dioxide powder according to claim 1, characterised in that the specific compacted bulk density is between 1000 and 10000 g/l x m² of specific surface area.
- 15 3. Silicon dioxide powder according to claims 1 or 2, characterised in that the chloride content is less than 50 ppm.
4. Process for the production of the silicon dioxide powder according to claims 1 to 3, characterised in that
 - 20 vaporous tetramethoxysilane and/or tetraethoxysilane together with air or with oxygen-enriched air and
 - separately hydrogen
 - 25 are supplied to a burner, and the mixture of gases is allowed to react in a flame in a reaction chamber connected in series to the burner, and the solid reaction product is separated from the gas stream by known means,
 - 30 the lambda value in the burner being between 0.95 and 1.5 and

sufficient secondary air also being supplied to the reaction chamber that the lambda value in the reaction chamber is between 0.8 and 1.6.

5. Process according to claim 4, characterised in that the volume ratio of oxygen/hydrogen in the burner is between 0.2 and 2.8.
6. Process according to claims 4 or 5, characterised in that the discharge velocity of the gases leaving the burner is at least 10 ms^{-1} .
- 10 7. Aqueous dispersion containing the silicon dioxide powder according to claims 1 to 3.
8. Aqueous dispersion according to claim 7, characterised in that the content of silicon dioxide in the dispersion is between 20 and 80 wt.%.
- 15 9. Aqueous dispersion according to claims 7 or 8, characterised in that the average aggregate diameter in the dispersion is less than 200 nm.
10. Aqueous dispersion according to claims 7 to 9, characterised in that it contains additives.
- 20 11. Process for the production of the aqueous dispersion according to claims 7 to 10, characterised in that silicon dioxide powder according to claims 1 to 3 is incorporated with a dispersing device into water, which can be stabilised by the addition of bases or cationic polymers or aluminium salts or a mixture of cationic polymers and aluminium salts or acids, and is then dispersed.
- 25 12. Use of the silicon dioxide powder according to claims 1 to 3 in dispersions, as a filler in rubber, silicone rubber and plastics, to adjust the rheology in paints and coatings, as a support for catalysts.

13. Use of the dispersion according to claims 7 to 10 for the production of glass articles, for chemical mechanical polishing, for the production of inkjet papers.